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THE NEW RHINE

BY

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Translated from "Die Rheinquellen." May, 1919, by Dr. A. Latt, Secretary,
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THE NEW RHINE

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BY

R. GELPKE.

ALL the Continental States, including the smaller countries which have recently been separated from the former Austro-Hungarian monarchy, to-day, have free navigable access to the sea, either directly or by natural waterways, such as the Danube, the Elbe and the Vistula.

The one exception is Switzerland. The moment the waters below Basle flow into the power canal on their left, the unimpeded line of traffic between our country and the North Sea will be for ever closed. True, this would not mean a death-blow to navigation itself, but the end of our right of self-disposal over the oldest natural waterway of the Continent.

For the time being, the prospects of holding open Switzerland's sole natural access to the Ocean are not very promising. According to the Peace Treaty regulations concerning the navigation of the Rhine, France is allowed the exclusive and unlimited right of using the hydraulic resources of the river from Basle to Lauterburg, a distance of 183 kms. (113 miles).

Independent of changes of a general kind, extraordinary concessions are made to France in Art. 358 of the Peace Treaty:—

(a) Concerning the right to take water from the Rhine to feed canals for navigation or irrigation canals, as well as for the generation of electric power, already existing or to be constructed in future;

(b) Concerning the exclusive right of the hydraulic use of the Basle-Strassburg section of the river.

There is a reservation, however, that such constructions must not interfere with navigation, and that the plans must be submitted to the Central Committee for Navigation on the Rhine.

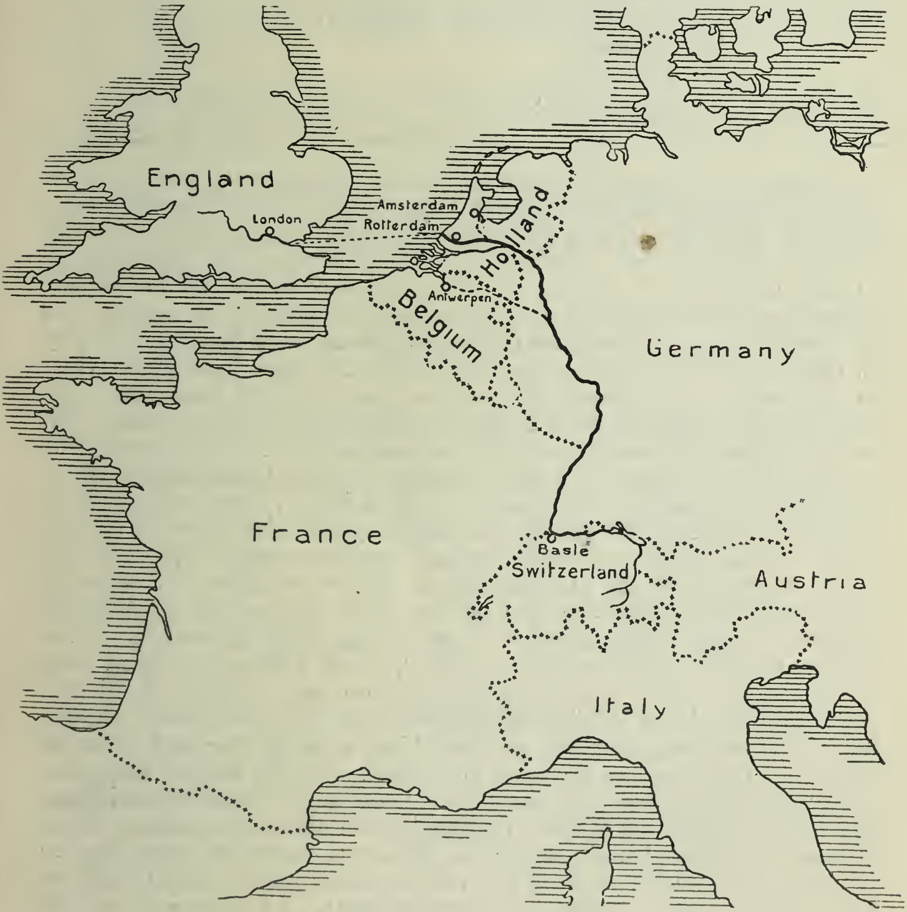
The following clause would appear strange:—

"Should Switzerland so desire, and the Central Committee give its consent, the jurisdiction of which may, according to Art. 362, be extended to the Rhine above Basle as far as the Lake of Constance (provided Switzerland agrees), Switzerland is to have the same rights on that part of the river which marks her frontier towards Germany, i.e., Switzerland is to have unlimited rights of building power-stations on the Baden-Swiss part of the Rhine, provided one-half of the value of the water power thus actually gained be paid to Germany."

The effect of the new regulations, whereby the "Revised Rhine Navigation Act" of 17th October, 1868, is considerably modified and enlarged, may have disastrous consequences for Switzerland. If the right is conceded to France of diverting the water from the Rhine into the power and irrigation canals on its left bank, these sections of the Rhine would then naturally run dry and navigation would no longer be possible. Therefore, our great anxiety is:—

Will France guarantee navigation by canal for barges of from 2,000 to 2,500 tons burden, and will she for this purpose construct locks sufficiently wide, at least 250 yds. by 25 yds., in order to enable two trains of barges to pass at the same time, and will she further provide sufficient accommodation for turning and manœuvring? There is every reason to doubt this. The International Rhine Navigation Committee is evidently less concerned about the hydraulic exploitation of the Rhine between Basle and Strassburg, a distance of 127 kms. (79 miles), than in the maintenance of an open waterway for large Rhine barges. It will, therefore, have to exercise its influence in respect of the necessity and importance of making navigation possible between Strassburg and Basle for the same class of ships that are in circulation between Rotterdam and Strassburg.

In taking over the monopoly of the use of water power in the above-mentioned section of the Upper Rhine, France naturally incurs a number of technical and financial obligations connected with navigation. She will not only have to provide for all the floating accommodation in the canal which the Committee may find necessary, but she will also have to meet the expenses in connection with such arrangements. It remains to be seen whether the privilege accorded to France in raising hydraulic power on this particular section will not, from a practical, as well as from an economical, point of view, meet with insurmountable difficulties. Supposing France should limit herself to placing simple box locks of about 100 yds. by 12 yds. at the power-stations, thus allowing only medium-sized barges of 600 tons and small screw steamers to ply above Strassburg as far as Basle, it is probable that the Rhine Navigation Committee would not give their consent to half-measures of this kind, as the advantages of cheap water freight would thereby be lost. Barges of 2,000 tons would have to tranship their cargoes into smaller craft at Strassburg. This would be a very unfavourable arrangement, whether we judge it from a political or from a financial standpoint. It would exclude all competition of tariffs between navigation and the Franco-Alsatian railways from Strassburg to Switzerland. Strassburg would control all shipping bound for Switzerland. By raising the tariff of transhipment and instituting passage regulations whereby the traffic in the artificial ports and locks would be hampered, Strassburg would be able to paralyse through navigation to Basle. The only means to prevent her from exercising an almost absolute control of the traffic on the Upper Rhine consists in the maintenance of the open waterway up to Switzerland. The enormous expenses incurred by the construction and working of a lateral canal would only be justified if the entire fleet of barges, comprising those of 2,500 tons burden, were allowed freely to traffic as far as Basle. The hydraulic stations would never pay their way if the burden of making the Alsatian canal navigable for large ships were thrown on them. The last word will always remain with practical economic—i.e., realisable—results, not with theoretical speculation. The exclusive right of France to take all the profit from such an undertaking makes it an imperative duty for her to take all the steps required by the International Rhine Committee to ensure free navigation on the Rhine for the larger class of barges. Now also Switzerland has secured a vote in the newly constituted International Executive for problems connected with navigation on the Rhine. But in spite of this fact, we must not give ourselves over to any illusion or exaggerated hope. It is just as well to remember that Switzerland can only realise her wishes and have her wrongs redressed



if the French delegates are ready to consider them and loyally to cooperate. The states represented in the new Convention for regulating the Rhine traffic can be divided into two groups:—

1st: Commercial countries:—

- (a) England;
- (b) Belgium;
- (c) Italy;

each with two delegates.

2nd: States bordering on the Rhine:—

- (a) France, with five delegates and the right of appointing the President;
- (b) Germany, with four delegates;
- (c) Holland;
- (d) Switzerland;

each with two delegates.

Thus altogether seven states with nineteen votes are represented on the International Rhine Navigation Committee. It would be very desirable for the United States of America and the Scandinavian countries to be represented too. Further, it is hardly fair that the two countries to take the most conspicuous part in the exploitation of the Rhine, Switzerland with control of over 377 kms. (234 miles) of the stream, and the Netherlands with 164 kms. (102 miles), should only be represented by two delegates each, whereas they should each, at least, have three. Only in one respect has Switzerland's position been slightly improved. Her right to a concurring vote in relation to questions bearing on navigation on the Rhine has now been confirmed on principle. Undoubtedly the arguments put forward by the delegates on the International Rhine Navigation Committee in favour of maintaining an open and stabilised waterway between Strassburg and Basle, practicable even in periods of low water, will be welcomed by all those interested in the development of navigation up to Switzerland. These prospects are seriously compromised, as there are now definite plans for the left, or Alsatian, side of the river to be canalised between Basle and Strassburg for the construction of power works. However, it will take a long time, even for only part of the canal to be brought into use. In spite of all this, Switzerland will not be discouraged, but will do her utmost to defend her rights to free navigation on the Rhine, although the task is by no means an easy one, as we have to contend with the radical up-to-date traffic policy of Strassburg, which party is recklessly pursuing the idea of practically closing the Rhine to all navigation above Strassburg. They want the Upper Rhine to be no longer a navigable river, but to become merely a ditch, as it were, from which water will be taken to feed the irrigation canals and power-stations. In exchange for the stately waterway of the free Rhine, which is fed by thousands of rivers and rivulets of Switzerland, they want to throw us back on the use of the Alsatian network of minor waterways in connection with the Rhine-Marne and Rhine-Rhone canals, all of them practicable only for barges of less than 300 tons burden. The following explanation will show the drawbacks of using the Rhine-Rhone canals between Strassburg-Napoleon's Isle-Huningue to Basle; not taking into consideration the loss of time caused by the necessity of transhipment of cargo at Strassburg, a canal barge of 250 to 280 tons burden drawn by horses requires seven days to complete the distance between Strassburg and Basle, whereas barges towed by tugs, carrying five times the weight of cargo, will make the journey by the open river in 25 to 30 hours. Coming down the Rhine under the same conditions, the journey is completed in as many hours as it takes days for horse-drawn barges to go up-canal (5½ to 6).

The plan is as little intelligible as it would be to make the Bernina railway take the place of the St. Gotthard railway as the greatest Swiss transit route.

There is little connection, therefore, between the actual facts and the proposals brought forward by a recent correspondent of the "Basler Nachrichten" in favour of navigation by canal.

Within the short space of five years navigation on the Rhine at Basle has not only come up to the standard of the canal traffic of Huningue, but has considerably surpassed it, as will appear from the subjoined statistics:—

YEAR	A. CANAL Trans-shipment at Huningue.	B. RHINE Trans-shipment at Basle St. John's.
1905	58,522 tons	3,149 tons
1910	52,840 tons	68,700 tons
1912	57,553 tons	71,600 tons
1913	about 60,000 tons	96,658 tons

Neither can any credit be given to the same correspondent's statements regarding the respective freights for transport on the canal or on the Rhine. In spite of a charge of 1.35 cts. per ton and per km. on the canal between Saarbrück and Mulhouse, as opposed to 2.5 cts., which is the Rhine through traffic rate, according to what he says, the following quotations are correct:—

(a) 0.94 cts. between Rotterdam and Basle;
(b) 1.19 cts. between Ruhrort and Basle.

This correspondent also maintains that a paddle-tug of 1,000 h.p. conveys two barges of 300 to 400 tons to Basle. In this he is entirely under a misapprehension as to the transit facilities of the river. As a matter of fact, a paddle-tug of this description with two boats in tow will transport a cargo of 1,200 tons of goods in through traffic within 30 to 32 hours, provided a good quality of coal is used as fuel (not stones as unfortunately is the case at present). Nor can the Rhone, intelligently and from a transport point of view, be compared with the Rhine, on account of the rapidity of its current, which is $0.15^{0}/_{00}$ superior. The difference between the fall of the Rhone and that of the Rhine is not $0.3^{0}/_{00}$, but only half of that, $0.15^{0}/_{00}$.

The Rhone falls in a section of 110 kms. (68 miles), from Tournon to the mouth of the Ardêche, at an average of 0.72 in a thousand, and the Rhine in the distance of 127 kms. (79 miles), between Basle and Strassburg, at an average of 0.87 in a thousand (not 1.0 per mille).

The lower figures for the transporting capacity of the Rhone are not so much due to the considerable fall in the bed of the river as to the following causes:—

(a) The absence of any first-class seaport at the mouth of the river as a means for feeding the traffic. Marseilles and Cette at present have no connection with the Rhone for ships of heavy tonnage. The Marseilles-Arles Canal for maritime intercourse is only now being completed; length, 81 kms. (50 miles).

(b) Traffic being confined to a cul-de-sac between Arles and Lyons, a distance of 283 kms. (177 miles).

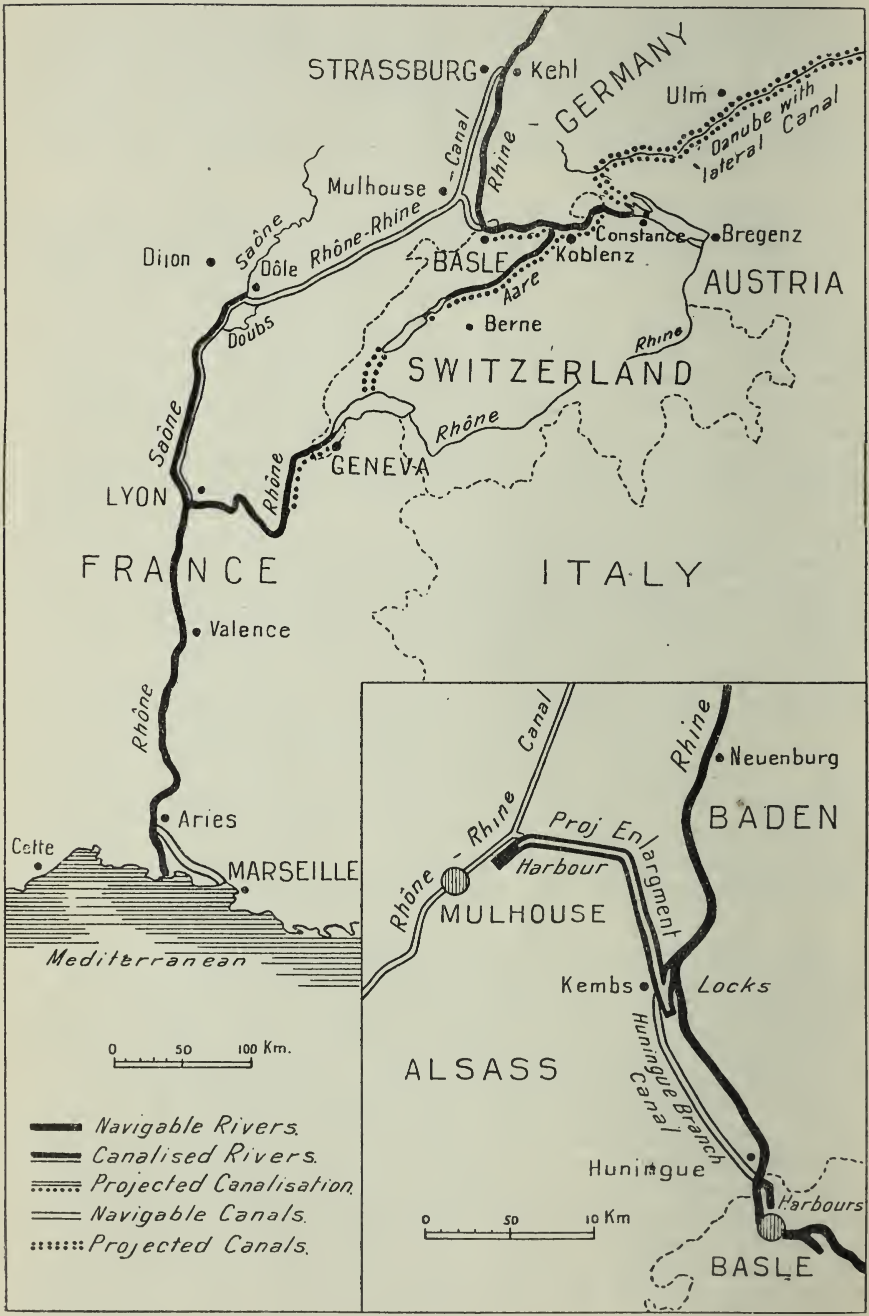
(c) The means of transportation being absolutely out of date. Lately, however, owing to Swiss initiative, a complete change is taking place in the tug traffic. A tug steamer, built by Messrs. Escher, Wyss & Co., in free action conveys 1,500 tons, distributed among three barges, up-stream from Beaucaire to Lyons. The distance of 270 kms. (168 miles) was covered in 48 hours in spite of the strong current. Finally, there is the fact of the bed of the Rhine becoming constantly deeper, which is used as an argument against the Rhine as a medium of transport. It has, however, not impeded navigation, as little as did the rapids 7.6 kms. (5 miles) below the point where the Rhine leaves Switzerland. If, on the other hand, the river bed were properly regulated, the erosive action of the current would diminish.

Blasting operations were undertaken by the Germans during the War on the rapids at Istein. Unfortunately, they omitted to remove the wreckage. No time should be lost in doing this. If the correspondent of the "Basler Nachrichten" wonders why we insist upon maintaining navigation on the Rhine in any circumstances, the following points, in addition to what has already been said, will answer his queries:—

In the case of the Rhine, Switzerland knows what she possesses and what she may still obtain from a legal, technical and economical point of view. She knows also what she does not like about the Huningue Canal. As regards the Alsatian Power Canal, there is no indication as to whether we shall gain anything at all, nor as to what such gain would be. One thing, however, we know: we should lose the free Rhine.

One other solution, more advantageous to Switzerland, is held out, viz., the construction of another Alsatian power canal, from Neudorf to Brisach, a distance of 50 kms. (31 miles). This canal is probably large enough to take ships of 600 tons. In this way 40% of the river, between Basle and Strassburg, would be available to carry medium-sized ships. Barges of 2,000 tons would be held up at Strassburg. Eventually, then, there is a prospect of a continuous power canal to Strassburg suitable for barges carrying 600 tons. It is noticeable that only the section between Strassburg and Basle is to be made into a canal; there is no suggestion of doing the same thing on the Rhine below Strassburg. Why are power-stations not constructed at Bingerloch and in the Rhenish mountain range, where there is a water supply twice as large as between Basle and Strassburg and where inclinations of 5‰ and more are to be found in longer sections? Strassburg would be extremely indignant if one were to make public any proposition with regard to canalising the Rhine below its port. Strassburg's rights of free access to the ocean are not to be interfered with. Objections are raised against the plan of regulating the course of the Rhine, the idea upheld in Basle, in opposition to which it is said that the suggestion of combining navigation with the exploitation of water-power has its origin in Switzerland. In reasoning thus, our friends leave altogether out of consideration the fact that Swiss waterways are not naturally navigable. It is only by means of locks, moveable weirs for surmounting rocks and rapids and the formation of numerous large reservoirs or lakes that the Rhine between Basle and Switzerland and the River Aare can be transformed into navigable waterways.

The Rhine between the Lake of Constance and Basle is totally different in character from the Rhine below Basle, which has for a thousand years been navigable, and the natural course of which can be artificially converted into a splendid shipping artery equal in depth to that part of the river below Strassburg. To this must be added that the whole of the existing Rhine flotilla, as also the through tonnage service, is adapted to the open and regulated character of the river. In spite of the swiftness of the current, the fees charged per ton were considerably lower in pre-war days than in any other canal or canalised river in Europe. To its character as an open and unhampered waterway the Rhine owes its uncontested superiority as an international highway of commerce. No other river in Europe can show a turnover at its ports of 104,917,513 tons a year, the amount dealt with in 1913 in the ports between Rotterdam and Strassburg, i.e., a distance of 701 kms. (435 miles). It is only natural, therefore, that we should wish


STRASSBURG
Kehl
GERMANY
Ulm
Danube with lateral Canal
Rhine - Canal
Rhine
Mulhouse
Saône
Rhône-Rhine
Dijon
Dôle
BASLE
Constance
Bregenz
Koblenz
AUSTRIA
Aare
Doubs
Berne
Rhine
SWITZERLAND
Saône
Rhône
GENEVA
LYON
Rhône
FRANCE
ITALY
Valence
Rhône
Aries
Cette
MARSEILLE
Mediterranean
0 50 100 Km.
Navigable Rivers.
Canalised Rivers.
Projected Canalisation.
Navigable Canals.
Projected Canals.
Canal
Rhine
Neuenburg
Rhône - Rhine
Proj Enlargment
Harbour
BADEN
MULHOUSE
Kembs
Locks
Huningue Canal
Huningue Branch
ALSASS
Huningue
0 50 10 Km
Harbours
BASLE

to apply the same system of regulation to the remaining part of the river between Strassburg and Switzerland, where during the summer months even barges having a tonnage of 1,300 and steamers of 1,200 h.p. were able to ply in spite of the neglected condition of the river.

It must be remembered that it is not a matter of rendering the stream navigable by regulating its shallow water, but rather of improving the navigability by means of uniting into one big channel all the waters of the stream. The object is not to create a new navigable waterway, but to equalise the depth of the one already existing. Any child can experiment on this idea by forming a ditch, when it rains, on a slanting gravel path in a garden, by trying to cause the various little rivulets to form only one channel. These united currents will automatically deepen the existing channel.

It ought to be possible to accomplish on a larger scale what children can do in their play, if only the same disinterestedness could prevail.

But so far, unly the section between Basle and Brisach would have accorded to France in the Peace Treaty, really bars the Rhine and compels the big Rhine barges to tranship their cargo to the small canal barges?

In the first place, the Alsatian power canal, from Neudorf to Brisach with over 50 kms. (31 miles) length, will have to be constructed with four successive stages or hydraulic stations.

The net gradient of the different stages down stream is:—

Stage I.—Grosskembs, 11.5 kms. (1) ($7^{1}/_{3}$ miles) 11.60 metres.
,, II.—Ottmarsheim, 25 kms. ($15\frac{1}{2}$ miles) 11.70 metres.
,, III.—Blodelsheim, 40 kms. (25 miles) 11.55 metres.
,, IV.—Neu-Brisach, 55 kms. ($34^{1}/_{3}$ miles) 12.60 metres.

Taking into consideration the discharge of water of 900 cubic metres and more per second for the period of 200 days each year, there is a maximum gain of about 100,000 hydraulic h.p. at each stage. On the remaining days the amount of power, in consequence of the inferior discharge of water, is reduced to a minimum of about 35,000 h.p.

The Rhine, from Neudorf to Brisach, a distance of about 50 kms. (31 miles), would be dried up for the greater part of the year. Only during those days when the discharge of water surpasses 900 cubic metres per second would the crippled Rhine above Brisach contain any water at all. Navigation below Basle would have to take its course through the power canal on the left bank.

Only the absolutely necessary shipping accommodation would be guaranteed. At each power station a lock of 100 by 12 metres is to be constructed to allow a barge with a cargo of 600 tons, 67 metres in length, and a small tug steamer, 30 metres in length, to enter. This is no compensation for the Rhine, on which any ordinary steamer could easily make its way up-river with two barges of 2,000 tons each, whilst on the downward journey it would take as many as four big barges. The least that we must expect from a canal system between Basle and Strassburg is:—

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(1) From the Alsatian point of departure, 0 km. from the Franco-Swiss Frontier.

(1) That twin-locks of 250 metres by 25 metres for tug trains should be built;

(2) That about every 5 kms. (3 miles) basins 200 metres wide should be constructed in the canal to allow sufficient room for turning.

If the requirements of navigation are duly taken into consideration in the device for the power canal Neudorf-Brisach, the total expenditure for the double locks for tug trains, accommodation for turning, and provisional communication canals, in view of the high gradient of the different stages (11.35-12.80 ms.), would amount to about 100,000,000 frs. (£4,000,000).

But so far, only the section between Basle and Brisach would have been transformed into a canalised waterway. There would still remain the section between Brisach and Strassburg, 72 kms. (45 miles), which would have to be opened for permanent navigation. It remains still to be considered which kind of construction will be employed on this part of the river, whether navigation canal or regulation of the stream.

To render the upper 55 km. ($34^1/_3$ miles) of the river navigable by canalisation and combine with it the generation of hydraulic power, only 43% of the entire distance of 127 kms. (79 miles), between Basle and Strassburg, would necessitate building expenses amounting to 100,000,000 frs. This is more than three times the sum required for regulating the open waterway of the river, and the result would leave the efficiency of the canal far below the possibilities of the Rhine.

Who is going to defray the expense of this costly navigation scheme? Who, too, is going to pay in the end for the interest and amortization of this tremendous financial undertaking? It will, inevitably, be necessary to charge a toll for the use of the locks. Naturally, the construction of this gigantic canal with four stages could not be completed without a considerable lapse of time.

But what is to be done in the meantime? Under any circumstances shipping must be continued and improved during this period. To begin with, the uppermost section, that of Grosskembs, with a fall of about 11.60 metres, will have to be constructed. The tail water canal of this station would enter the Rhine 12 kms. (7½ miles) below Basle (Franco-Swiss frontier). This section of the canal could not be open to traffic before, approximately, seven years, so that in any case the remaining 115 kms. (71½ miles) of river would have to be used for navigation as previously. After another five years the second part, from Ottmarsheim with a fall of 11.70 metres, would be opened. Therefore, it means that a period of 11 to 12 years has to elapse before canalisation of a distance of only 25 kms. of river length (15½ miles) is completed. This is less than 20% of the distance between Basle and Strassburg. Meanwhile, 102 kms. ($63^1/_3$ miles) of open river between Ottmarsheim and Strassburg would still have to be used for navigation. In the same number of years the work of regulation of the river over the whole distance, from Basle to Strassburg, could be completed. If, therefore, the navigation is to be maintained between Basle and Strassburg during the extremely lengthy period required for the work of canalisation, the regularisation of the river between Strassburg and Neuenburg, 97 kms. (60 miles) cannot be avoided. To ensure navigation between Strassburg and Brisach, 72 kms. (45 miles), there is no other means but to regulate the shallow water. This ought to be done not only on this section, but also between Brisach and Neuenberg, as navigation must be ensured during a period of about 20 years, required for completing the new power canal of 50 kms. in length (31 miles). The regulation of the current of the Rhine is an indispensable auxiliary and expedient for the maintenance of navigation between Strassburg and Basle, even in the case of partial canalisation. It is in the interest of France to aid the development of Basle as an inland port for Central Europe by rendering the open Rhine efficient as a waterway. Alsâtian interests will themselves be advanced by this solution. The industrial town of Mulhouse, for instance, could be connected with the Rhine by means of a canal only 13 kms. in length (8 miles), between Grosskembs and Napoleon's Isle. The canal would not have one single lock and would be accessible for big Rhine barges. There is a model for it in the Huningue branch canal which, at Grosskembs, approaches the Rhine within a distance of 400 yds.. All that is required would be the broadening of the Huningue branch canal between Grosskembs and Napoleon's Isle to about 25 yds. at the base. Thus Mulhouse would get two waterways to Strassburg.

Firstly, the existing Rhine-Rhone canal, which is navigable for barges of 300 tons and has 45 locks on a total length of 101 kms. (63 miles).

Secondly, the large combined waterway of the Rhine and the canal of Grosskembs, about 125 kms. (78 miles) in length, navigable for ships of a cargo capacity of 2,000 tons and only one lock to negotiate, when the boats coming from the Rhine enter the enlarged branch canal of Grosskembs and Napoleon's Isle. The advantages of this new canal over the old one are considerable. The journey up-river is shortened by three to four days and as much as five to six days can be saved down the river.

The cost of constructing the Mulhouse canal in question would be about 8,000,000 frs.

As Strassburg is the terminus of commercial navigation on the Rhine-Marne canal, so Mulhouse would, in like manner, become the head and trading centre of the Rhine-Rhone canal.

Notwithstanding the fact of the Rhine having the character of a frontier waterway for France for a distance of 183 kms. (113 miles), from Basle to the Palatinate, she must not overlook the importance of connecting Mulhouse with the Rhine as a means of freeing the network of canals which hitherto ended in a blind alley. France thus would advance her interior waterways towards Lake Constance and the Danube. She has, therefore, the greatest interest in converting the Upper Rhine into a first-class navigable waterway.

There would still remain quantities of unappropriated water-power to satisfy the economic needs of Upper Alsace. Among the many thousands of swift rivers on the Continent, there is not one that cannot be adapted for power purposes. But there is no second free and navigable river which can be compared with the conventional Rhine for magnitude and commercial importance to the whole of Europe. As long as an approximate amount of 450,000 hydraulic h.p. can with great economic advantage be utilised between Schaffhausen and Basle for Alsatian industrial purposes (amounting to 600-700 frs. for 1 h.p. as against 1,500 frs. below Basle, according to pre-war prices), there ought to be no hurry to hand over the incomparable stretch of navigable river between Basle and Strassburg to selfish industrial exploitation.

Looked at from an unprejudiced point of view, there can be no two opinions on the fact that the utilisation of the Upper Rhine on the section in question, for purposes of power and navigation, can only be achieved at the expense of the river's importance and efficiency as a great highway of European traffic. Therefore, it is in the interest of the whole civilised world that the waterway of the Rhine should be fully developed between Basle and Rotterdam for through navigation, without impediments and locks. We appeal to all those nations which are either directly or indirectly interested in the navigation of the Rhine to save the unique and most precious highway of commerce which leads right into the heart of the vast economic region of Western Europe.

The meaning and importance of Switzerland's co-operation in the definite settlement of the future status of the Rhine is illustrated by the following conclusions:

1. Of the entire length of the Rhine (1,238 kms., 759 miles), the Swiss part between the source of the river and the Franco-Swiss frontier comprises 377 kms. (234 miles). Out of the 697 kms. (or 433 miles), between the Swiss-French frontier and the Dutch frontier France's share is 183 kms. (113 miles), or not quite half of that enjoyed by Switzerland. The Dutch Rhine measures 164 kms. (102 miles). The regions drained by the Rhine before it separates into two streams at Pannerden, in the Netherlands, comprises about 160,000 square kms., 36,494 of which lie above the Baden-Swiss frontier; the Swiss sphere of influence therefore comprises 23% of that region. The low water average, which is not reached 47 days of the year, registers, approximately, 510 cubic metres a second at Basle, and 1,100 cubic metres at the Dutch frontier. Owing, therefore, to the regulating influences of the Swiss lakes the low-water average of the Rhine at the Swiss-French frontier comprises 45% of the low-water average at the Dutch frontier.

Between April and September, the Swiss section of the Rhine region has a decisive influence on the movements of the water level. The regularisation of the influx from the Swiss lakes into the Rhine would swell the depth of the low water below Basle at the rate of 150-200 cubic metres a second, which would have a considerable influence on the depth of the stream on the whole river between Basle and Rotterdam. Therefore, it is not too much to say that among all the countries bordering on the river Switzerland possesses the best and most important title to a fair share in the use of the Rhine.

2. The Rhine between Strassburg and Basle in its present natural state forms a navigable waterway for large ships, 481,609 tons of cargo having been conveyed by steam tugs to and from Basle, between 1905 and 1918. Even under the present condition of the river, traffic has been increased six-fold during a period of five years.

Goods traffic at Basle, in 1908, showed a turnover of 15,477 tons and in 1913, 96,653 tons.

In 1913, with a total traffic of 98,653 tons, the saving of freight amounted to 268,854 frs.

The average saving in freight for a 10-ton load amounts to:—

18.20 frs. up-stream;
45.30 frs. down-stream.

For transit, the following rates per km. (1,000 yds.) were paid:—

(a) For the transport of English coal between Rotterdam and Basle, 0.75 pfg. per ton.

(b) For the transport of German coal between Ruhrort and Basle, 0.97 pfg.

(c) Exporting Swiss granite stone from Basle to Rotterdam, 0.5 pfg.

The following amounts have been saved on Swiss exports in down-stream traffic:—

Aluminium	80	francs	per	10 tons.
Calcium carbide	50	,,	,,	,,
Condensed milk	50	,,	,,	,,
Ferro-silicium	50	,,	,,	,,
Cement	34	,,	,,	,,

As already stated, therefore, the Rhine represents at the present time a shipping route of the first order between Basle and the Ocean. This fact is the more important, because in pre-war times the authorities in control of the Upper Rhine had done practically nothing to comply with the stipulations of Articles 28 and 30 of the revised Rhine Navigation Act concerning the keeping open and improvement of the water course.

3. All the commercial countries interested in the markets of Central Europe should, therefore, do everything in their power to keep the Rhine an open river and to have the work of regularisation, which is already completed between Rotterdam and Strassburg, i.e., a distance of 701 kms. (435 miles), extended as far as Basle. What is wanted is the continuation up to Basle of the work already completed between Sondernheim and Strassburg, 85 kms. (53 miles), which at the rate of 165,000 marks per km. had cost about 14,000,000 marks. A minimum depth of 2 yds. should be ensured up to Basle on 318 days of the year. Reckoned at 250,000 frs. per km., the regulation of the river between Strassburg and Basle, during a period of 10 to 12 years, would cost about 30,000,000 frs. In about five or six years' time the uninterrupted traffic for large boats of 1,000 tons, between Basle and the sea, would be ensured. On the other hand, if the alternative project of a power canal, Neudorf-Brisach, 50 kms. (31 miles), is to become an efficient factor for industrial purposes, the waterway between Basle and Strassburg will, at its best, be practicable only for barges of medium size and not above 600 tons.

4. To supply the necessary hydraulic power needed for Alsatian industries, what could be simpler than to develop the still unused water power of the Rhine above Basle, where 455,000 h.p. are at free disposal, and also the energies of the Aare, between Aarau and Coblenz, where there still remain 167,000 h.p. to be utilised?

5. The construction of power canals below Basle should be held up as long as power sufficient to cover the needs of Alsatian industries can be drawn from the Rhine above Basle. The traffic on the river at Basle would by then have so far consolidated itself, that the delegates of the countries represented on the Central Committee for Rhine Navigation would be able to reconsider all the questions at stake, and could, in full cognizance of the actual facts, devise the best means of developing the Upper Rhine in the most profitable and successful manner. Switzerland would, no doubt, give financial assistance towards the regularisation of the current between Strassburg and Basle, as well as she would meet the requirements of Alsace in electric power at profitable rates.

6. In case of non-fulfilment of her desire to have free access to the sea by way of the Rhine, a waterway traced by nature, practicable even to-day and protected by international treaties, Switzerland would be obliged to take strong preventive measures, such as barring the way to Lake Constance and refusal to methodically develop the regulation of the Swiss lakes. The bulk of her shipping interests would have to be thrown on the Upper Italian waterways and upon the ports of the Adriatic Sea.

7. Switzerland's predominant importance as a Power on the Rhine, coupled with the mission incumbent on the country which has the source of the Rhine, the Rhone, and indirectly the Danube within her borders, to create transcontinental waterways from the Atlantic Ocean, or from the Gulf du Lion to the Black Sea, make it desirable for her to be more strongly represented on the Rhine Navigation Committee. She ought to have at least three delegates, instead of two, as provided in the Treaty.

It is useless, however, to argue whether canalisation of the Basle-Strassburg section will meet the requirements of a trade route, whether constructing locks and using artificial canals will help to develop a fair amount of navigation to Basle. It is known that an object can be technically attained by many ways and means. But the question interesting Switzerland at the present moment is whether the route imposed on her by means of the proposed canalisation assures her as much independence of tariffs in her intercourse with the ports on the North Sea, and whether the waterway of the river will remain unfettered and uninterrupted. Everyone will agree that this is not the case. Even the best system of canalisation would paralyse the express service down from Basle. It would prevent competition between the Rhine and foreign railways and submit the whole of the navigation to the control and police of the superintendents of the power-stations, canals and locks. Those who regulate the flood-gates and locks, govern the canals and administer all their accommodation by regulation, also dictate rules of fiscal policy to this traffic as a means of preventing any, if only imaginary, attempt at competing with the ports inside the Strassburg commercial region. The short history of the Basle tug service is rich in examples of this kind.

Switzerland is far from asking anything that would not be good for the interests of general traffic, by suggesting to France anything which could in the least be interpreted as a sacrifice in favour of navigation. She fully realises how necessary it is for the Alsatian industries to have sufficient water power. Switzerland is delighted to be able to satisfy these requirements by making use of the still unexploited and cheap water power on the Baden-Swiss section of the Rhine.

As little as it is intended to make use of the inferior Valaisian anthracite coal, as long as an outside supply of coal is not lacking, as little must Switzerland allow the costly exploitation of water power at the expense of the incomparable treasure of river navigation as represented by the Rhine between Basle and Strassburg. There are thousands of rivers on the Continent from which water power can be drawn, but a natural navigable waterway of the importance of the Rhine cannot be found twice. Unfortunately, it is not entirely through need of water power that this unfair scheme of canalisation, which at the same time means destruction of the most ideal trading route of the Continent, is proposed, but for the incomprehensibly selfish desire to maintain the predominance of the port of Strassburg.

We appeal to greater France, to the France of the great Alpine routes and canal constructions. We should like to remind her of the time of Napoleon I., when navigable communication between the Rhine on the Baden-Swiss frontier and the Danube was planned. Switzerland is willing to do all she can to realise this ideal scheme of opening for the French waterways an outlet to the Danube. In exchange for this we demand recognition of our right to the free Rhine.

Czecko-Slovakia has the Elbe and the Danube, Poland claims the Vistula and Danzig, Jugoslavia borders on the Adriatic Sea and governs the Danube. Of the whole family of European states, not excepting the youngest and hitherto only nominally known formations, all have free access to the sea. There is only one exception: Switzerland, the foster-mother of all the great Continental rivers. She does not get anything, and even the little to which she has an unconditional right, the small silver strip, fed by her snow-clad mountains, her glaciers and her lakes, is to be cut asunder, although thereby the country has been linked to the Ocean for thousands of years. So disastrous an undertaking must not be allowed to be carried out.

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THE POLYGLOT PRINTING CO., Ltd.
72-74, Paul Street, Finsbury London, E.C.2.